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Ltr. No. 77F-0505-94

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INTERNAL CORRESPONDENCE

NUCLEAR DIVISION

POST OFFICE BOX Y, OAK RIDGE, TENNESSEE 37830

To (Name) D. W. Smith

Date May 5, 1977

Division

Location

Originating Dept.

Answering letter date

Copy to G. B. Marrow  
W. R. Martin  
R. D. Williams  
File (NoRC)

Subject Estimated Mercury Losses in  
Creek Waters - 1955 through 1975

Reviews of plant records and internal memoranda were made to determine the estimated amounts of mercury discarded in Poplar Creek waters. As a result, the amount of mercury which was discarded in creek waters from 1955 through 1962 was computed to be 235,000 pounds. Since 1962, the amount of mercury discarded in creek waters has been less than 5352 pounds. Since 1972, the creek waters have had a mercury level of less than 0.001 mg/l (0.001 ppm) which is equivalent to less than 18 pounds per year.

Attached in Table 1 are a collection of estimated losses for record purposes. These data are also graphically shown in Figures 1 and 2.

*J. M. Napier*  
J. M. Napier

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M.R. Theisen, EASL

APR. 23 1997

Date

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Table 1

## Summary of Estimated Mercury Losses in Poplar Creek

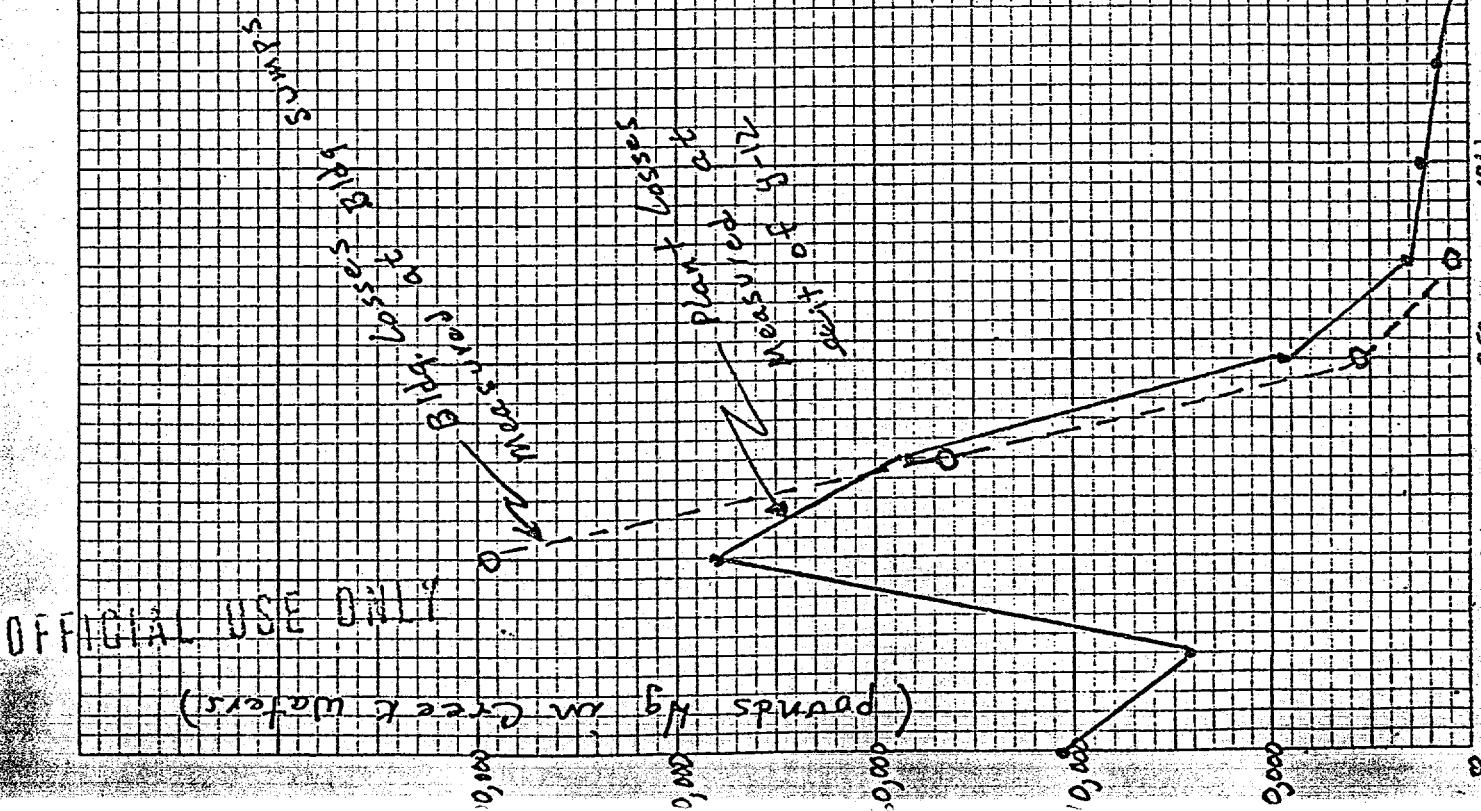
Calendar Year	Poplar Creek <sup>1</sup>		Building Losses <sup>1</sup>		Poplar Creek	
	Mercury Concentration (mg/l)	Losses (lbs/Hg)	Mercury Concentration (mg/l)	Losses (lbs/Hg)	Concentration (ml/l)	Pounds (Hg)
1955	1.18	40,278	-	-	1.00	30,680
1956	0.88	28,695	-	-	1.00	30,974
1957	2.37	76,181	-	98,834	2.40	71,080
1958	2.01	56,605	-	53,417	2.20	66,069
1959	0.67	19,029	-	11,032	-	-
1960 <sup>2,3</sup>	0.20	6,094	-	1,732	-	-
1961 <sup>2,3</sup>	-	4,767	-	-	0.21	6,216
1962	-	3,828	-	-	0.11	4,344
1963 <sup>3</sup>	-	-	-	-	0.024	932
1964 <sup>3</sup>	-	-	-	-	< 0.030	< 550
1965 <sup>3</sup>	-	-	-	-	< 0.080	< 1450
1966 <sup>3</sup>	-	-	-	-	< 0.050	< 910
1967 <sup>3</sup>	-	-	-	-	< 0.050	< 910
1968 <sup>3</sup>	-	-	-	-	< 0.005	< 91
1969 <sup>3</sup>	-	-	-	-	< 0.005	< 91
1970 <sup>3</sup>	-	-	-	-	< 0.005	< 91
1971 <sup>3</sup>	-	-	-	-	< 0.010	< 182
1972 <sup>3</sup>	-	-	-	-	< 0.005	< 91
1973 <sup>3</sup>	-	-	-	-	< 0.001	< 18
1974 <sup>3</sup>	-	-	-	-	< 0.001	< 18
1975 <sup>3</sup>	-	-	-	-	< 0.001	< 18

<sup>1</sup>Data collected from internal letters contained in folder #Q9-10 entitled "Mercury Losses (Poplar Creek)" from D. W. Smith.

<sup>2</sup>Data collected from Plant Records —Reports Y-1112, Y-1131, Y-1171, Y-1228 through Y-1232.

<sup>3</sup>Data obtained from internal letters and published information obtained from M. Sanders.

NOTE: Creek flow estimate from 1961 through 1975 was  $6 \times 10^6$  gallons per day. Prior to 1961, flow data were reported and were a nominal  $10 \times 10^6$  gallons per day.



1955 thru 1968 = 235,477 lbs Total  
 1963 thru 1970 = 400,474 lbs Total  
 (1970 thru 1975 = 100 less than 327 lbs Total)

(Note: Since 1964, losses values  
 have been reported as "less than"  
 since 1973, values have been  
 less than 0.001 ppm)

1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000

# $\text{H}_2$ Concentration in Paper - Creek - Yearly Avg.

